ELECTRONIC INNOVATIONS IN ACTION
TUBES

—PRODUCT INFORMATION—

6LY8

Triode-Pentode

The 6LY8 is a miniature triode-pentode containing a high-mu triode and a sharp-cutoff pentode. The pentode is intended for use as a video amplifier and the triode for general-purpose use.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC*	6.3±0.6	Volts
Heater Current‡	0.75	Amperes

Direct Interelectrode Capacitances§

Pentode Section

Grid-Number 1 to Plate: (Pg1 to Pp)	0.075	pf
Input: Pg1 to (h + Pk + Pg2 + Pg3 + i.s.)	13	pf
Output: Pp to (h + Pk + Pg2 + Pg3 + i.s.)	4.4	pf

Triode Section

Grid to Plate: (Tg to Tp)	3.8	pf
Input: Tg to (h + Tk + Pk + Pg3 + i.s.)	2.6	pf
Output: Tp to (h + Tk + Pk + Pg3 + i.s.)	2.8	pf

MECHANICAL

Operating Position - Any
Envelope - T-6 1/2, Glass
Base - E9-1, Small Button 9-Pin
Outline Drawing - EIA 6-3

Maximum Diameter	0.875	Inches
Minimum Diameter	0.750	Inches
Maximum Over-all Length	2.625	Inches
Maximum Seated Height	2.375	Inches

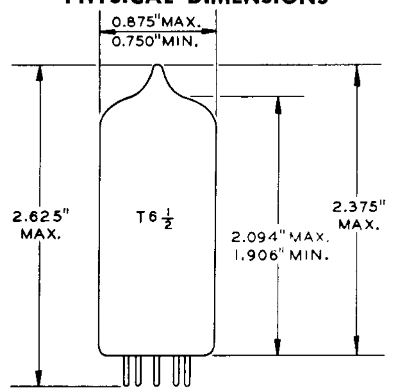
MAXIMUM RATINGS

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

PHYSICAL DIMENSIONS

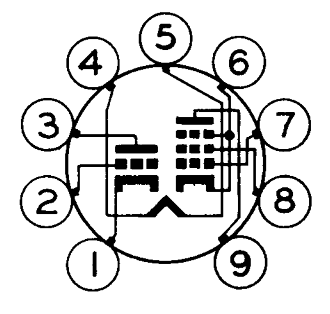


EIA 6-3

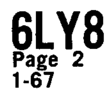
TERMINAL CONNECTIONS

Pin 1 - Triode Cathode
Pin 2 - Triode Grid
Pin 3 - Triode Plate
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Pentode Cathode, Grid Number 3, and Internal Shield
Pin 7 - Pentode Grid Number 1
Pin 8 - Pentode Grid Number 2 (Screen)
Pin 9 - Pentode Plate

BASING DIAGRAM



EIA 9DX



MAXIMUM RATINGS (Cont'd)

DESIGN-MAXIMUM VALUES

	Pentode Section	Triode Section	
Plate Voltage	330	330	Volts
Screen Supply Voltage	330	---	Volts
Screen Voltage - See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage	0	0	Volts
Plate Dissipation	5.0	1.0	Watts
Screen Dissipation	1.1	---	Watts
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak	200	200	Volts
Grid-Number 1 Circuit Resistance			
With Fixed Bias	0.5	0.5	Megohms
With Cathode Bias	1.0	1.0	Megohms

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

	Pentode Section		Triode Section	
Plate Voltage	35	200	250	Volts
Screen Voltage	100	100	---	Volts
Grid-Number 1 Voltage	0	---	-2.0	Volts
Cathode-Bias Resistor	---	82	---	Ohms
Amplification Factor	---	---	100	
Plate Resistance, approximate	---	60000	59000	Ohms
Transconductance	---	20000	1700	Micromhos
Plate Current	54	19.5	1.0	Milliamperes
Screen Current	13.5	3.0	---	Milliamperes
Grid Voltage, approximate				
Ib = 10 Microamperes	---	---	-5	Volts
Grid-Number 1 Voltage, approximate				
Ib = 100 Microamperes	---	-6.3	---	Volts

NOTES

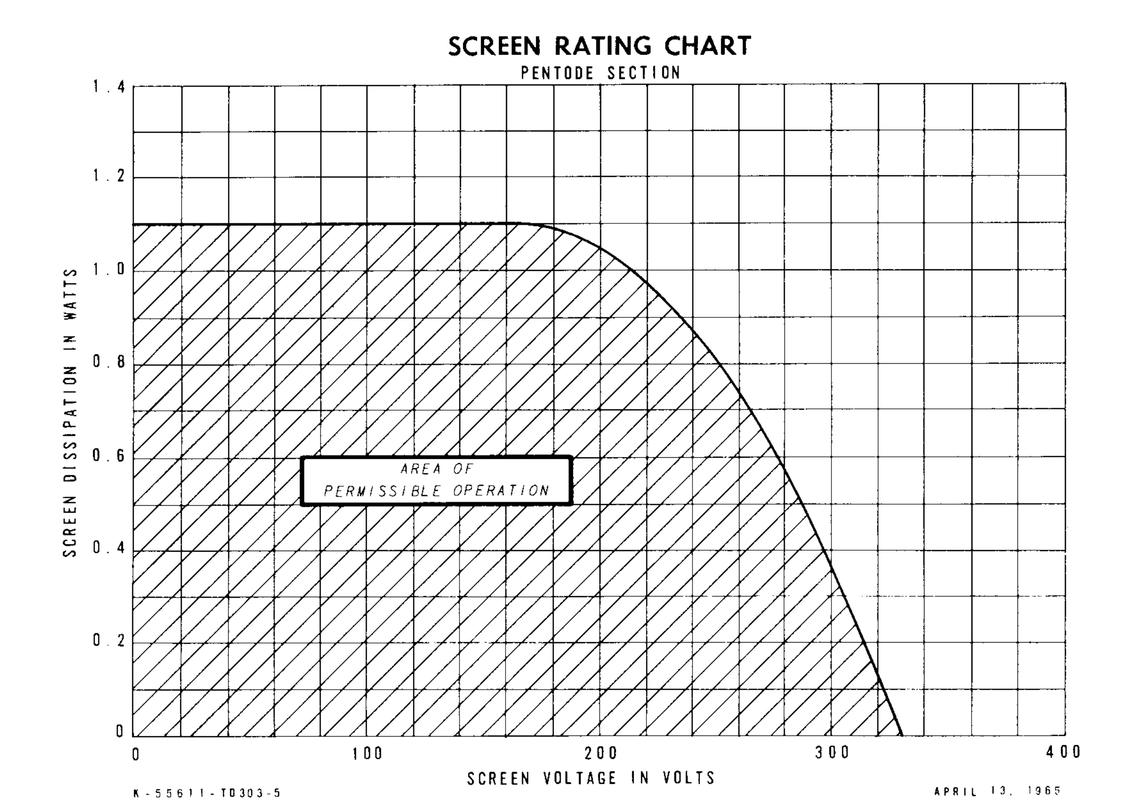
* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

‡ Heater current of a bogey tube at Ef = 6.3 volts.

§ Without external shield.

SCREEN RATING CHART

PENTODE SECTION



AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION

E_f = RATED VALUE
E_{c2} = 100 VOLTS

I_b @ E_{c1} = 0 VOLTS
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-4.0
I_{c2} @ E_{c1} = 0 VOLTS
-1.0
-2.0
-3.0

PLATE CURRENT (I_b) IN MILLIAMPERES
70
60
50
40
30
20
10
0

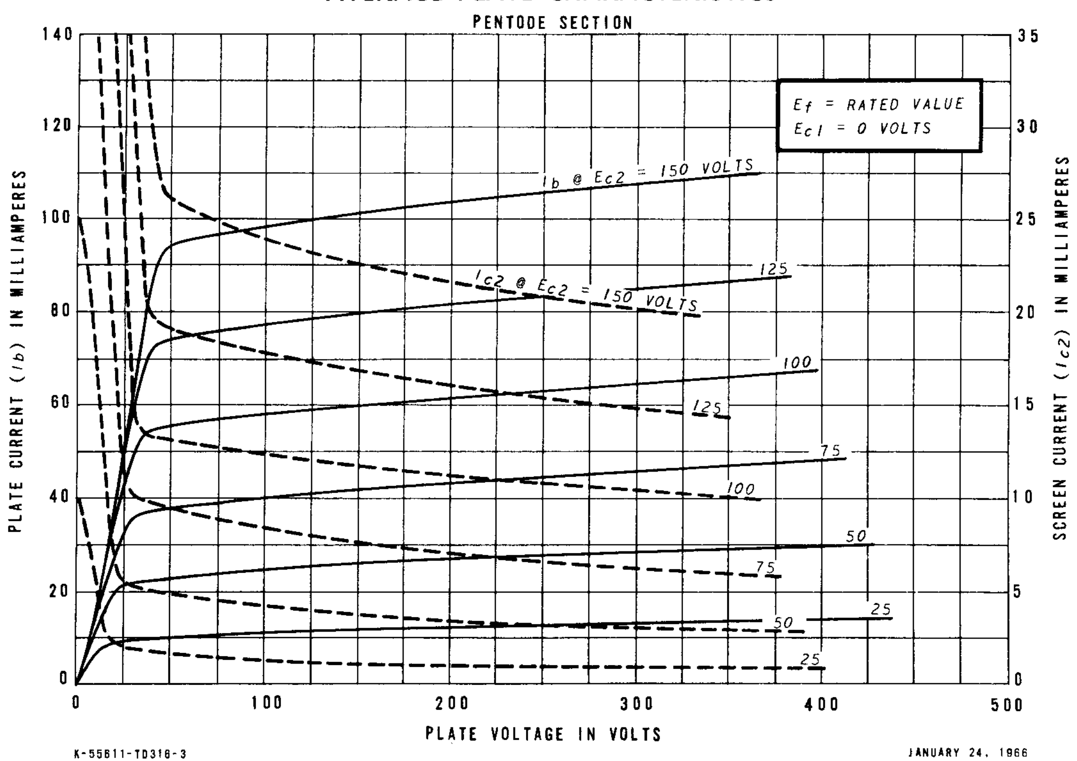
SCREEN CURRENT (I_{c2}) IN MILLIAMPERES
35
30
25
20
15
10
5
0

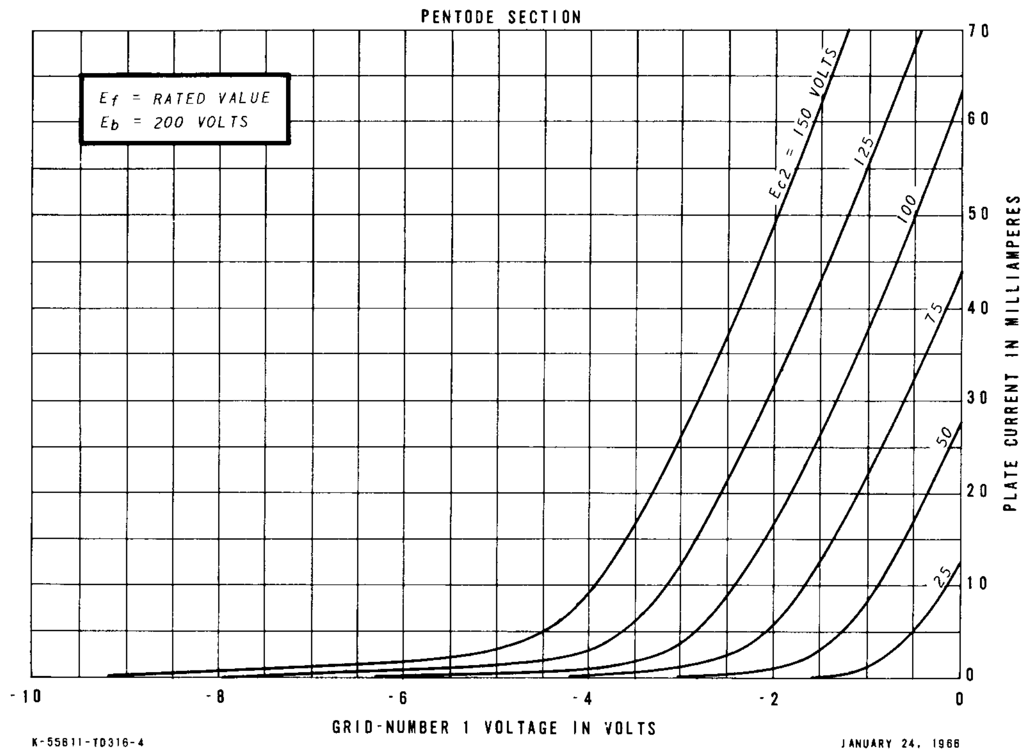
0
100
200
300
400
500

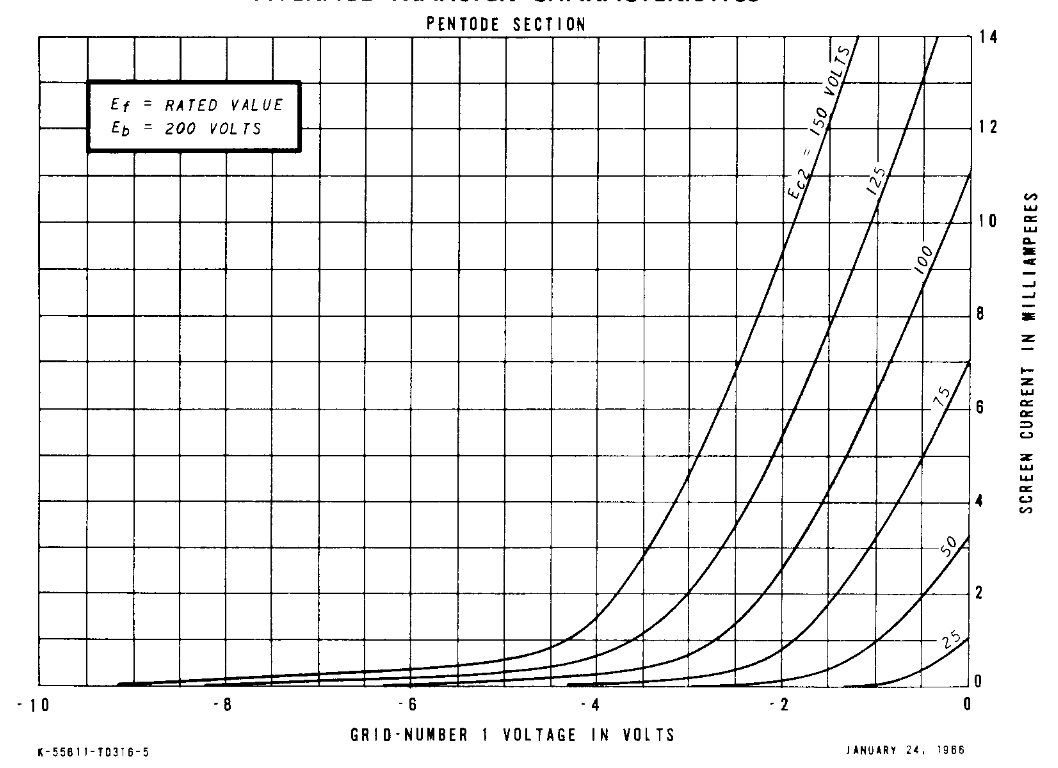
PLATE VOLTAGE IN VOLTS

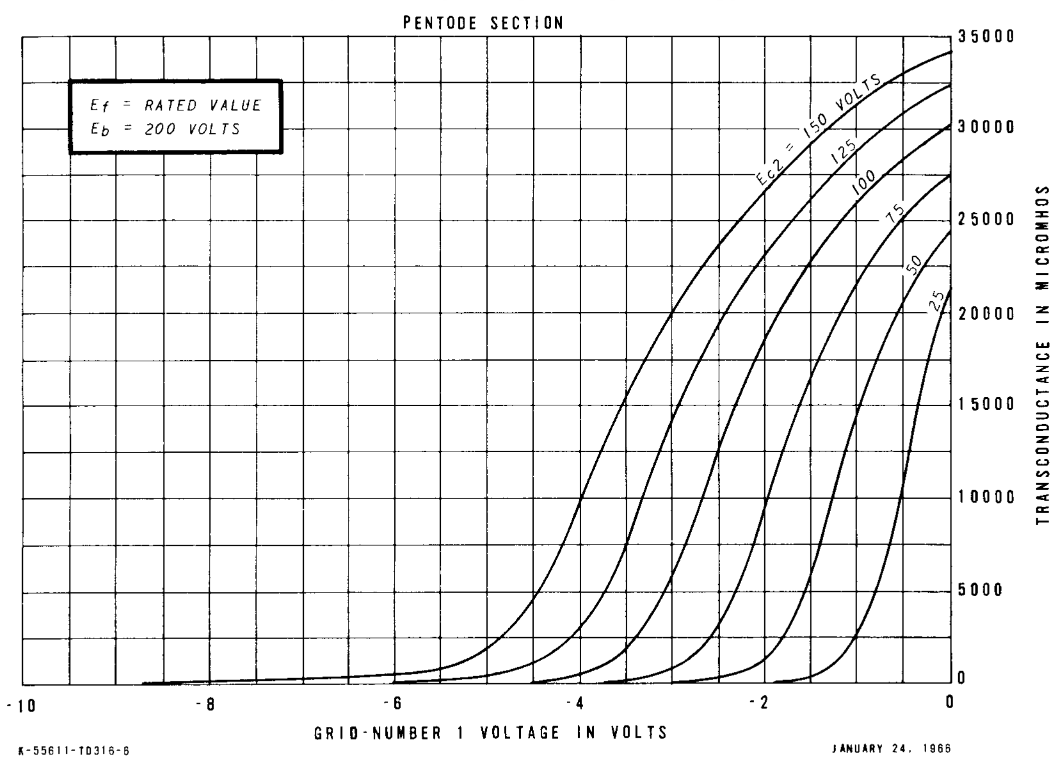
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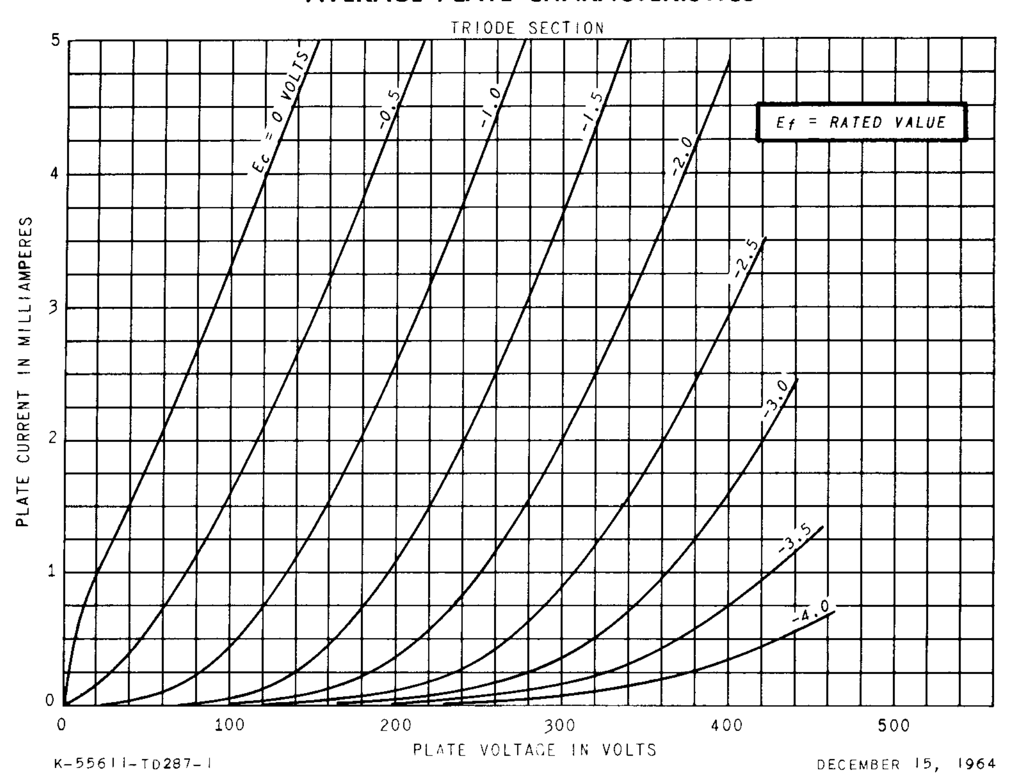

AVERAGE PLATE CHARACTERISTICS
PENTODE SECTION
Ef = RATED VALUE
Ec1 = 0 VOLTS
Ib @ Ec2 = 150 VOLTS
Ic2 @ Ec2 = 150 VOLTS
125
100
75
50
25
PLATE CURRENT (Ib) IN MILLIAMPERES
SCREEN CURRENT (Ic2) IN MILLIAMPERES
PLATE VOLTAGE IN VOLTS
0
100
200
300
400
500
140
120
100
80
60
40
20
35
30
25
20
15
10
5
K-55811-TD316-3
JANUARY 24, 1966


AVERAGE TRANSFER CHARACTERISTICS
PENTODE SECTION
Ef = RATED VALUE
Eb = 200 VOLTS
Ec2 = 150 VOLTS
125
100
75
50
25
PLATE CURRENT IN MILLIAMPERES
GRID-NUMBER 1 VOLTAGE IN VOLTS
-10
-8
-6
-4
-2
0
70
60
50
40
30
20
10
K-55811-TD316-4
JANUARY 24, 1966

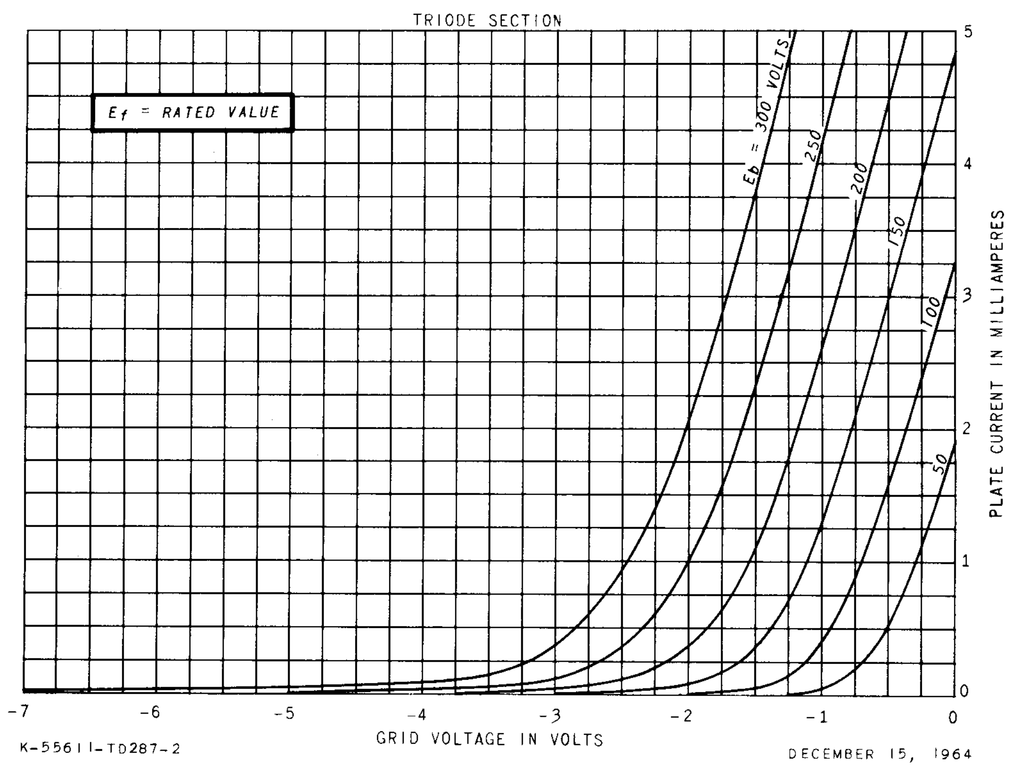

AVERAGE TRANSFER CHARACTERISTICS
PENTODE SECTION
Ef = RATED VALUE
Eb = 200 VOLTS
Ec2 = 150 VOLTS
125
100
75
50
25
14
12
10
8
6
4
2
0
SCREEN CURRENT IN MILLIAMPERES
-10
-8
-6
-4
-2
0
GRID-NUMBER 1 VOLTAGE IN VOLTS
K-55611-TD316-5
JANUARY 24, 1966


AVERAGE TRANSFER CHARACTERISTICS
PENTODE SECTION
Ef = RATED VALUE
Eb = 200 VOLTS
Ec2 = 150 VOLTS
125
100
75
50
25
35000
30000
25000
20000
15000
10000
5000
0
TRANSCONDUCTANCE IN MICROMHOS
-10
-8
-6
-4
-2
0
GRID-NUMBER 1 VOLTAGE IN VOLTS
K-55611-TD316-6
JANUARY 24, 1966

AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS

